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ABSTRACT

This study examined the effectiveness of using selected self-report measures assessing motivational orientation, learning strategies, procrastination, and perceptions of daily hassles to facilitate the prediction of final examination grades in a self-paced introductory psychology course. Four surveys purporting to measure the constructs were chosen, and a demographic survey was also administered. The course used a local area network of personal computers to administer all materials and to collect data for each participant. Students agreeing to participate in the study were administered the surveys during the first three class sessions of the semester. The course was self-paced, with students determining their rate of engagement. A criterion level of accumulated points determined course letter grade and course completion. Data were collected on 149 students, 122 of whom completed the course. The final examination was given in two segments. Part 1 covered core modules that all students were required to master during the course of the semester before they attempted additional modules. Part 2 covered additional modules. Hierarchical regression analyses indicated that self-efficacy for learning and performance was positively related to grades on part 1 of the final examination. Results suggest that self-efficacy contributes to student performance. Implications for early interventions to improve student self-efficacy and achievement are discussed. (Contains 3 tables and 82 references.) (Author/SLD)

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Predicting Final Examination Grades in a Self-Paced Introductory Psychology Course: The Role of Motivational Orientation, Learning Strategies, Procrastination, and Perception of Daily Hassles

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Abstract

This study examined the effectiveness of using selected self-report measures assessing motivational orientation, learning strategies, procrastination, and perceptions of daily hassles to facilitate the prediction of final examination grades in a self-paced introductory psychology course. Research has shown these factors to be associated with academic success, and of concern to instructors and students alike. Surveys that economically and effectively assess these factors would be invaluable for the instructor attempting to predict student performance early in a given academic semester and determining possible interventions to promote academic success. Four surveys purporting to measure the constructs were chosen. A demographic survey was also administered.

The course utilized a local area network of personal computers to administer all materials and to collect relevant data for each participant. Students agreeing to participate in the study were administered the surveys during the first three class sessions of the semester. The course was self-paced, with students determining their rate of engagement. A criterion level of accumulated points determined course letter grade and course completion. Data was collected on a 149 students, 122 of whom completed the course. The final examination was given in two segments: Part I covered core modules which all students were required to master during the course of the semester before they attempted additional modules. Part II covered additional modules.

Hierarchical regression analysis indicated that self-efficacy for learning and performance was positively related to grades on Part I of the final examination. Results suggest that self-efficacy contributes to student performance. Implications for early interventions to improve student self-efficacy and achievement are discussed.

Introduction

For faculty of colleges and universities, student success is a major concern. Student success and achievement is often perceived as being indicative of overall institutional success or failure, and may impact administrative decision-making in several areas (e.g., faculty / administrative accountability, salary, tenure, promotion, student recruitment, state and federal funding, budgetary considerations). The academic success or failure of individual students is foundational to these issues and, therefore, identifying salient factors that impact student academic success and decision-making is of profound importance (Entwistle, 1995; Snow, 1993).

Research within a sociological paradigm has shown that various factors differentially affect an individual's feelings, cognitions, and resultant decisions with regard to the college student experience. These include but are not limited to perceptions of financial abilities, familial responsibilities, and initial intentions to remain at an institution of initial choice (Terenzini, Pascarella, & Lorang, 1982; Terenzini, et al., 1993). Ethnic identification, secondary school achievement, parental encouragement for college, family economic status, and the student's appraisals and interpretations of the academic and social communities of the university or college of choice have also been suggested (Tinto,1975, 1986a, 1986b). They affect the degree to which individuals perceive that they are integrated into the academic and social networks of the institution (Tinto, 1993), and therefore, influence a student's persistence decisions and academic success. Seppanen (1995) states that successful adaptation to the college experience, both academically and socially, is inferred by the student's persistence toward the goal of graduation.

In addition to these sociological influences, researchers have identified various factors affecting academic performance that are more proximal to the student. Of particular interest are: (a) motivation, (Pintrich & Schunk, 1996), (b) the use of learning strategies (e.g., Ridley, Shultz, Glanz, & Weinstein, 1990), (c) procrastination (e.g., Lay, 1986) and, (d) the occurrence and perception of hassles (e.g., Kanner, Coyne, Schaefer, & Lazarus, 1981). Although research has shown these to be related to various measures of academic performance and achievement, their ability to predict student engagement and performance has not been investigated.

The purpose of this study was to discern the predictive ability of factors associated with the college student experience (i.e., success in high school, motivational orientation, learning strategy utilization, procrastination, perceptions of daily hassles) in the prediction of student performance.

Predictor Variables

Gender

Instructors at all levels have a perception of differences in academic performance between males and females. Of interest are differences between females and males in the areas of motivation, strategy use, and self-regulation in academic contexts. Research has shown some differences. For example, Patrick, Ryan, and Pintrich (1999), utilizing a sample of seventh- and eighth-grade students, investigated the influence of extrinsic and mastery goal orientation on self-regulated learning. They found mastery goal orientation to be positively related to self-efficacy and also to the use of self-regulatory and cognitive strategies for both male and female students, with extrinsic goal orientation being negatively related to the use of self-regulatory strategies for all students. They also found significant gender differences in relations between goal orientations (i.e., intrinsic and extrinsic) and self-regulated learning. With regard to self-regulatory strategies and self-efficacy, male students were more adversely affected by an extrinsic orientation than female students across domains (i.e., English, mathematics, social studies). Conversely, mastery goal orientation predicted increased self-efficacy and increased use of regulatory strategies for female students.

Relative to motivation and education, Pintrich and Schunk (1996) reviewed the literature regarding gender differences in relations among goal orientation, motivation, self-regulated learning (i.e., cognitive and regulatory strategy utilization), and content or topic interest. In general, female students are more likely to have somewhat inaccurate and lower expectancies of success, perceptions of competence, and self-efficacy than do male students. Also, equivocal results have been found with regard to gender differences in attributional processes, with some researchers reporting that women are more likely to attribute success to external and unstable causes while attributing failure to stable and internal causes, while others have not reported such differences. In terms of task value

and interest, male and female adolescents differ in the relative value they ascribe to various subjects (i.e., mathematics, English), but these differences were not always evidenced with younger children.

Motivation

Motivation is a process through which purposive or goal-directed activity is initiated and sustained, is considered to be an important quality in academic achievement, and is inferred from behaviors such as the individual's choice of learning tasks, effort, persistence, and verbal professions of interest (Pintrich & Schunk, 1996), as well as how and when learning takes place (Schunk, 1991). A general expectancy-value model (e.g., Eccles, 1983; Pintrich, 1988a, 1988b, 1989) has been suggested for conceptualizing student motivation to learn. It proposes that three motivational components may be linked to self-regulated learning. These are: (a) an expectancy component, which includes a student's beliefs about their ability to successfully perform a task; (b) a value component, which includes student's beliefs about the importance and interest of a task, as well as their goals; and (c) an affective component, which includes a student's emotional reactions to a task. Predominantly, this affective component has been conceptualized as test anxiety (e.g., Garcia & Pintrich, 1995; Naveh-Benjamin, McKeachie, & Lin, 1987; Pintrich, Smith, Garcia, & McKeachie, 1991). However, anxiety may be manifested through many sources other than those associated with the classroom experience. For example college students express concerns with procrastination (e.g., Beswick, Rothblum, & Mann, 1988; Lay, 1986; Soloman & Rothblum, 1984) and daily hassles (e.g., Blankstein & Flett, 1992), which have been shown to be a significant stressors, and thus, associated with anxiety, worry, and emotionality.

Pintrich and DeGroot (1990) found that self-efficacy and intrinsic value were positively related to cognitive strategy use and to academic performance, with the best predictors of performance on classroom assignments being self-regulation, self-efficacy, and test anxiety. Predictors of average grade were self-regulation and self-efficacy. Intrinsic value was found to be related to the use of cognitive strategies and self-regulation, but did not have a significant direct relation to student performance. However, the researchers state that students who make choices to be cognitively engaged

and who are self-regulating are those who are interested in and value the classroom tasks (i.e., task value) and suggest that this is an important component for teachers to consider when encouraging cognitive engagement with course content. Self-regulation was the best predictor of academic performance on all outcome measures and "suggests that use of self-regulating strategies, such as comprehension monitoring, goal setting, planning, and effort management and persistence, is essential for academic performance on different types of actual classroom tasks" (p. 38). Learning goal orientation and mastery goal orientation have been shown to be associated with self-efficacy, self-regulation, and the use of self-regulative and cognitive strategies (Patrick, Ryan, & Pintrich, 1999; Wolters & Yu, 1996).

Garcia and Pintrich (1995), reporting studies demonstrating the predictive utility of the Motivated Strategies for Learning Questionnaire, indicate that specific motivation sub-scales are most predictive of course grades. Using a college sample, they reported that, for students in the computer and natural sciences, the subscale assessing student self-efficacy to be the strongest predictor of course grades. For students in the social sciences, humanities, and foreign languages, the sub-scale assessing test anxiety was marginally significant. However, the instrument was given within one month of the end of the academic term.

For the purpose of this study the motivational aspects of the college student experience predictive assessed were student self-efficacy, intrinsic motivational orientation, and task value.

Learning Strategies

Of interest in the area of academic achievement and aptitude, is the conceptualization and assessment of the ability of the individual to become self-directive or self-regulative in the acquisition of information and the construction of knowledge. Self-directed learning has been defined as an instructional process in which the individual is an active agent in the learning process, undertaking primary control of and responsibility for the planning, implementation, and evaluation of the learning effort (Hiemstra, 1994). This tendency toward self-direction is generally considered to be multidimensional, being (a) partially learned [e.g. the acquisition and utilization of learning strategies (McKeachie, Pintrich, & Lin, 1985; Pintrich et al., 1991, 1993)], (b)

partially situational [i.e., affected by factors associated with the learner, such as the family or learning environments / contexts (Pratt, 1988; Spear & Mocker, 1984)], and (c) partially the result of personality traits and dispositions (Grow, 1991).

Implementation of effective learning strategies is associated with academic performance (e.g., Corno & Mandinach, 1983; Stoynoff, 1997; Weinstein & Mayer, 1985). Stoynoff (1997) determined that specific learning and study strategies were associated with student academic performance. Higher achievers, as determined by grade point average, number of credits earned, and number of withdrawals, were more effective in the utilization of social assistance in their learning, spent more time studying, and remained current with assignments. Similarly, Schutz and Lanehart (1994) found that effective learning strategies, along with the establishment of long-term educational goals and the accomplishment of educational sub-goals, improved academic performance.

Previous research provides theoretical and empirical evidence for the inclusion of specific cognitive, metacognitive, and resource management factors in the prediction of student performance. Pintrich and DeGroot (1990) found self-regulation, to be the best overall predictor of achievement. Garcia and Pintrich (1995) found that time and study environment management, a component of resource management strategies, to be significant. Therefore, these two strategic variables were assessed and implemented in the present study.

Affective Factors

The general expectancy-value model of student motivation to learn (Eccles, 1983; Pintrich, 1988a, 1989) proposes three components of motivation associated with self-regulation, with affective factors being one of the components. In the present study, two affective factors—procrastination and hassles—were considered.

Procrastination. Procrastination is the tendency toward the purposive delay in beginning or completing a task (Ferrari, 1989; Ferrari, Parker, & Ware, 1992; Lay, 1986), which is under one's control or self-regulation (Tuckman & Sexton, 1990), to the point of experiencing subjective discomfort (Ellis & Klaus, 1977; Solomon & Rothblum, 1984). Research has shown that procrastination is associated with low self-confidence and low self-esteem, high states of anxiety, depression, neurosis, forgetfulness, disorganization, non-competitiveness, and lack of energy (Beswick, Rothblum, & Mann, 1988; Effert &

Ferrari, 1989; Ferrari, 1991a; Janis & Mann, 1977; Lay, 1986, 1987,1988; McCown, Johnson, & Petzel, 1989; Soloman & Rothblum, 1984).

Procrastination has been found to be a particular concern to college students. Ellis and Klaus (1984) estimated that 95 % of American college students procrastinate. Soloman and Rothblum (1994) found that 50 % of students included in their survey reported that they procrastinated on academic tasks at least half of the time, with an additional 38 % reporting that they procrastinated occasionally. Primary reasons for academic procrastination were fear of failure at the academic task (e.g., writing a term paper) and the perceived aversiveness of the task (Rothblum, Soloman, & Murakami, 1986; Soloman & Rothblum, 1984).

Hassles. Kanner, Coyne, Schaefer, and Lazarus (1981) state that hassles are "the irritating, frustrating, distressing demands that to some degree characterize everyday transactions with the environment" (p.3), and are a major source of stress for the individual. Their incidence is more frequent and their effect has been shown to be even more predictive of an individual's subjective well-being and psychological dysfunction (Chamberlain & Sitka, 1990; Kanner et al., 1981) than are major life events, as described by Holmes and Rahe (1967). Of particular interest are daily hassles (i.e., those which occur frequently) that have been identified as being of concern for college students. The most frequently identified negative events associated with the undergraduate college student experience were found to be misplacing and losing things, troubling thoughts about the future, and not getting enough sleep (Elliot, Gramling, Lee, Elliott, & Shrout, 1989). Essentially these are problems with self-regulation, which may hinder attainment of academic goals.

Factors influencing a student's success in the college experience are multidimensional and interrelated with specific factors being identified in previous research that are associated with measures of achievement (e.g., ACT, SAT) and performance (e.g., grade point average). However, questions remain as to the relationships among these factors and their ability to accurately predict a student's performance in a particular course. Also, relationships among these factors are of interest. The purpose of this study was to discern the predictive ability of factors associated with the college student experience (i.e., success in high school, motivational

orientation, learning strategy utilization, procrastination, perceptions of daily hassles) in the prediction of student performance.

Dependent Variable

Generally, some type of continuous performance outcome is utilized in an effort to measure student success in various academic settings and situations. This may be (a) a cumulative indicator of institutional grades (e.g., grade point average), (b) a global indicator of academic achievement (e.g., ACT scores), (c) an indicator of success in a specific course or subject (e.g., course letter grade based on student attainment of criterion points, accumulated total points for a course), or (d) criterion score or a letter grade achieved by students on individual or group performance tasks or singular examinations. For instructors of college-level courses, scores on examinations and letter grades are most commonly used. The design of the course from which the data for this study was collected presents a unique situation with regard to the assessment of individual student performance. Students were essentially self-paced and were expected to be self-regulated with regard to most aspects of course participation including the choice and sequence of unit materials and the timing of assessments (i.e., unit mastery tests, final examinations). They could choose content material units (i.e., chapters) in any sequence. The sequence could vary greatly among students. As a result, all students did not necessarily complete the same units or modules. Also, final course letter grade was determined by a student accumulating criterion points assigned to these mastery examinations, as well as to tasks which were not of an academic nature or associated with course content (e.g., attendance at a specific university function). However, all students were required to achieve mastery criterion for four core content areas or modules (i.e., introductory concepts, research methods, physiological psychology, principles of learning) that were considered to be of essential importance in the field of psychological inquiry. Given this common element of the course, the final examination was composed of two separate sections. The first section (Final Examination I) consisted of questions from the course test bank that pertained only to the four core units or modules described above. The second section (Final Examination II) consisted of questions from the course test bank that pertained to the remaining units available in the course (i.e., remaining

chapters in the text). Therefore, student grades on Final Examination I were used as the measure of academic performance for this study.

The use of a participant's grade attained on a single examination as proxy of course performance limits the generalizability of the present study. Although students were required to take the final examinations, grades on each (i.e., Final Examination I, Final Examination II) were weighted minimally toward course points which determined final course grade. However, given the structure and format of the course, it was deemed to be the most consistent and reliable single indicator of learning and performance assessed.

Given the intended purpose of this study, the hypothesis tested was as follows: After accounting for the effects of gender, intrinsic motivation, self-efficacy, task value, self-regulation, time and study management, perceptions of daily hassles and procrastination will account for a significant portion of the variance in final examination scores of college students in a self-paced, introductory psychology course.

Method

Participants

Participants were 139 college students enrolled in selected sections of an introductory psychology course at a regional public university in Kentucky. Data were accumulated over a period of three semesters. Participants (N=139) ranged in age from 17 to 41 years (M = 20.4, SD = 3.18). There were 81 females, ranging in age from 17 to 41 years (M = 20.11, SD = 3.88), and 57 males, ranging in age from 18 to 27 years (M = 19.13, SD = 1.82). With respect to academic status, 46.4% (n = 64) of participants indicated that they were freshmen, whereas 34.1 % (n = 47) indicated that they were sophomores. Eighteen participants (13%) indicated that they had achieved junior status, and nine (6%) indicated that they had achieved senior status. Participants identified themselves as being Caucasian (n = 115), Black (n = 12), Asian (n = 6), Hispanic (n = 2), or other (n = 3). With respect to religious preference, 24 indicated Protestant, 15 indicated Catholic, and one indicated Jewish. The majority (n = 98) selected either 'none' or 'other' in response to this questionnaire item.

Course Format and Design

The course was designed to incorporate the concepts of CAI (computer aided instruction), and the fundamental principles of PSI (Personalized System of Instruction) as described by Keller (1968, 1972, 1981). PSI is considered to be a synthesis of the principal elements of both mastery learning (Bloom, 1981) and programmed instruction (Skinner, 1954). The system incorporates five principal features that distinguish it from other instructional delivery systems (Keller, 1968; Buskist, Cush, & DeGrandpre, 1991). These features are (a) student self-pacing, (b) unit mastery, (c) the de-emphasis of instructional lectures, (d) the use of student proctors, and (e) an emphasis on written materials. The Personalized System of Instruction has been used primarily as a replacement for traditional lecture classroom teaching in higher education (e.g., Keller, 1968; Cook, 1990; Fletcher, 1992). Additionally, PSI has been shown to be an effective instructional delivery system in various academic disciplines (e.g., psychology, statistics, engineering) and has produced greater student achievement with significantly less variation among students than traditional lecture courses (Kulik, Kulik, & Cohen, 1979; Dunkin & Barnes, 1986).

Personal computer workstations and local area network (LAN) systems now make it possible to more closely and efficiently monitor the progress of individual students. The implementation of such a system, combining the elements of PSI with present technology, presents several advantages. These include: (a) effective and efficient presentation and scoring of course quizzes and criterion mastery tests; (b) increased availability to students for the purposes of engaging in these activities; (c) immediate, individualized, and effective presentation and evaluation of other assessments of interest to the instructor (e.g., surveys, questionnaires, etc.); (d) presentation and control of tutorial and supplemental materials; and (e) automatic accumulation and storage of data associated with an individual student's profile of engagement with the course materials (e.g., the number of attempts to achieve mastery on quizzes or tests; the amount of time spent engaged in the utilization of course tutorials, practice quizzes, and unit mastery tests; the size of the accumulated data file; the dates and times at which the student initiated engagement).

The common experience for all students in the course was the requirement that they achieve criterion levels of mastery on core content units (i.e., chapters) considered foundational and essential to the understanding of psychology before they were permitted engagement with unit materials of their own choosing (i.e., the remaining chapters). These core content units were to be attempted and criterion mastery achieved by each student before continuing with additional units or chapters. These core units were (a) introductory information, (b) basic research methodology, (c) physiological psychology, and (d) principles of learning, and corresponded with chapters in the text used. After attaining mastery of these units, students could choose any of the other course units (i.e., chapters) in any sequence in order to accumulate points toward final course grade.

Procedures

For this course, all questionnaires and surveys, quizzes, and examinations were presented, and data recorded, scored, and analyzed by personal computers connected to a dedicated computer server. It should be noted that the physical and technical components of this course were in place for several successive semesters of instruction and were found to be reliable in the delivery of course materials and the accumulation and scoring of data relevant to the present study and other research.

Students began the course with an introductory session in which they were presented a description of the course syllabus and brief instructions pertaining to (a) the location of designated computer facilities, (b) the use of individual computer workstations and programs pertaining to the course, (c) the dates and hours that facilities are available to students, and other pertinent information. The class met formally for the first three scheduled sessions. Data for the present study were collected during these sessions.

Following the initial orientation session previously described, students participated in two class sessions at the beginning of the semester during which they completed pre-course assessments, research questionnaires and surveys, and a demographic questionnaire. Activity sessions (e.g., computer simulations or exercises, individual / group observations), lecture and discussion sessions addressing the principal instructor's research and /or principal course topics of psychological inquiry, or tutorial sessions were conducted intermittently throughout the semester. Tutorials and

simulations, as well as unit practice quizzes, and unit mastery tests / examinations were presented to each student via computer workstation.

The course was essentially self-paced. A student determined (a) his or her rate and degree of engagement (i.e., the amount of time spent in the computer labs working on various course materials), and (b) the order and sequence of course units corresponding to topic chapters in the course text. The text for the course was the eighth edition of Introduction to Psychology: Exploration and Application (Coon, 1997). All students were required to attain mastery criteria for each of the four core content areas: introductory concepts, research methods, physiological psychology, principles of learning. Following completion of these core units, students were free to choose other units or chapters in any order and sequence.

Upon attainment of criteria sufficient to complete the course, students were administered both sections of the final exam via computer workstation. Depending upon an individual student's rate of engagement and performance, it was possible for them to complete the course well before the end of the semester. Final Examination I contained multiple-choice questions regarding content relevant to the essential core units as previously discussed. Final Examination II contained multiple-choice questions from the remaining chapters of the text.

Materials

Assessment of factors related to the college student experience (i.e., motivation, learning strategies, procrastination, daily hassles) was accomplished by the administration of the self-report questionnaires and surveys. Administration of all questionnaires was conducted during the second and third regularly scheduled class meetings of a given semester (i.e., within the first two weeks of the beginning of the course).

These assessments were modified so as to be presented singularly to each student via networked computer workstation and administered in such a way that each student was presented with, and was required to respond to, only one survey, and only one survey item, at a time. The program was constructed so that students were presented with the following information for each of the assessments in the same sequence: (a) an introductory statement regarding the questionnaire; (b) instructions regarding how the

student is to make and record response choices; and (c) the list of items for the presented inventory / survey / questionnaire. Students were required to respond to each item as it was presented. If the student failed to respond to an item or items, the program was constructed in such a way that the student was presented with those items at the end of the questionnaire, and was, therefore, required to respond appropriately before they could exit the questionnaire and the session.

Motivational Orientation and Learning Strategies

The Motivated Strategies for Learning Questionnaire (MSLQ) is an 81-item self-report instrument, incorporating 15 subscales. It was designed to assess the motivational orientation of college students and their use of different strategies for learning that the individual implements in a college course. The MSLQ is based on a general cognitive view of motivation and learning strategies, with the student being represented as an active processor of information whose beliefs and cognitions are important mediators of instructional input (Pintrich et al., 1993). The instrument consists of two sections. For each item of the instrument, students rate themselves on a 7- point Likert-type scale ranging from 1 ("not at all true of me") to 7 ("very true of me") with some items being reverse scored. Scale scores for each of the 15 subscales are determined by calculating the mean of the items that comprise each subscale.

Pintrich et al. (1991) stated that the correlation of scale scores with final course grades is moderate but significant, demonstrating predictive validity. They also reported Cronbach's alpha, an assessment of internal reliability, for each of the 15 subscales. These range between .52 and .93.

Motivational orientation. The motivation section of the Motivated Strategies for Learning Questionnaire was used to assess the substantive components of an individual student's motivation (e.g., Pintrich et al., 1991), and is based on a social-cognitive model that proposes three general motivational constructs: (a) expectancy, (b) value, and (c) affect (Pintrich, 1988a, 1988b, 1989). This section is comprised of 31 items "assessing the student's goals and value beliefs for a course, their beliefs about their skills to succeed in a course, and their anxiety about tests in a course" (Pintrich et al., 1993, p. 804). Three subscales of the motivation section of the MSLQ were used in the present study to measure the selected factors. These were the subscales measuring: (a) intrinsic

motivation or goal orientation (IGO), (b) task value (TV), and (c) self-efficacy of learning and performance (SELP).

Learning strategies. In the present study, the learning strategies section of the Motivated Strategies for Learning Questionnaire (Pintrich et al., 1991) was used to assess a student's utilization of cognitive and metacognitive learning strategies, as well as their management of physical resources in the learning environment. This section is based on a general cognitive model of learning and information processing (e.g., Weinstein & Mayer, 1985), and consists of 50 items encompassing three areas along nine subscales. For the purposes of this study, the subscales assessing metacognitive self-regulation (MSR) and management of time and study environment regulation (TSER) were utilized.

Procrastination

For the present study, the construct of procrastination was assessed using the Procrastination Scale (Tuckman, 1991), a self-report measure designed to assess an individual's procrastination tendencies, operationally defined as the lack or absence of self regulated performance and the resultant tendency to delay or avoid completely a task for which the individual has control (Tuckman & Sexton, 1990). The instrument consists of 35 statements regarding feelings and behaviors associated with procrastination. Subjects respond to each item utilizing a four-point Likert scale with regard to the degree that each statement refers to their feelings and/or behaviors [i.e., (1) "that's me for sure," (2) "that's my tendency," (3) "that's not my tendency," (4) "that's not me for sure"].

The Procrastination Scale was developed from a larger survey that consisted of 72 statements referencing three topics (Tuckman, 1991). The topics were (a) a general self-description of the individual's tendency to delay initiation of tasks, (b) a tendency of the individual to experience difficulty doing unpleasant things and to actively work to avoid or reduce unpleasant feelings of such tasks, and (c) a tendency to attribute the cause of unpleasant circumstances to others. The author derived the 35-item Procrastination Scale created from the original 72 items. According to Tuckman (1991), "... the Procrastination Scale appears to provide a valid and reliable estimate of the tendency to waste time, delay and intentionally put off things that should be done" (p. 479). A cumulative score of procrastination is calculated by summing the adjusted scores of the 35 items.

Daily Hassles

For the present study, the Brief College Student Hassles Scale (Blankstein, Flett, & Koledin, 1991) was used to assess perceptions of daily hassles. This is a modified version of the Brief College Hassles Scale (Blankstein & Flett, 1992), a 20-item measure derived from the 117-item Hassles Scale constructed by Kanner, Coyne, Schaefer, and Lazarus (1981).

The Hassles Scale constructed by Kanner et al. (1981) was originally developed for use with middle-aged adults. In response to the need for specificity in the assessment of daily hassles, researchers developed instruments for early adolescents (Kanner, Feldman, Weinberger, & Ford, 1987), adolescents (Compas, Davis, Forsythe, & Wagner, 1987), older and younger men (Ewedemi & Linn, 1987), and elderly men and women (Holahan & Holahan, 1987). Additionally, Blankstein, Flett, Hewitt, Koledin, and Mosher, as cited in Blankstein et al. (1991) expressed concerns of the validity of The Hassles Scale (Kanner et al., 1981) when considering relevant life experiences of college students, especially those of the majority of undergraduates. Research indicated that daily problems for college students were typically academic, social, and financial in nature (Fisher & Hood, 1987; Flett, Pliner, & Blankstein, 1989). As a result, the Brief College Hassles Scale (Blankstein & Flett, 1992) was derived from The Hassles Scale (Kanner et al., 1981).

Concern as to whether or not the Brief College Hassles Scale (BCHS) sampled the entire domain of college student hassles prompted Blankstein and Flett (1991) to develop a revised version of the scale, addressing relevant hassles that college students had specifically reported. Subsequently, the Brief College Student Hassles Scale [BCSHS] (Blankstein & Flett, 1991) was constructed, containing items relevant to the college student experience. Specifically a disproportionate number of items reflecting academic, social, and financial concerns were included. This instrument was administered to participants in the present study.

Following procedures similar to those of Blankstein and Flett (1992), participants were presented with a general definition of hassles and asked to respond to each item on the inventory in terms of the event's persistence (i.e., a combination of the frequency and duration of experienced hassles) relative to their personal experiences. For the purpose of

this study, subjects responding to the questionnaire items were instructed to consider the relative persistence of each item and rate each using a 7-point Likert-type scale. The scale for each item ranges from 1 ("This has never been a hassle for me"), to 7 ("This is a hassle for me most of the time"). A cumulative score of hassles severity and persistence is calculated by summing the scores for each of the 20 items. The range of the scores is between 20 to a maximum of 140.

Results

The means and standard deviations attained for each of the predictor variables are shown in Table 1. The results obtained compare favorably with descriptive statistics reported in previous studies discussing the construction and validation of the selected instruments and subscales (Blankstein et al., 1991; Pintrich et al., 1991; Tuckman, 1991).

Means and standard deviations for the selected motivation subscales and the selected learning strategies subscales of the Motivated Strategies for Learning Questionnaire used in the present study compared favorably with those reported by Pintrich et al. (1991) and Pintrich et al. (1993).

Tuckman (1991) reported a median score of 89 for a list of 72 four-point Likert scale items used to construct the Procrastination Scale (N=50). Subsequent factor analysis of these items identified the 35 items selected for the Procrastination Scale (PRO). This 35-item scale was administered to participants in the present study.

For the perception of daily hassles measure utilized for this study, the authors reported descriptive information (i.e., mean, standard deviations) for each of the 20 items comprising the Brief College Student Hassles Scale (Blankstein et al., 1991). By totaling the mean item scores presented, a mean score for the instrument was calculated (M = 64.85). Compared to participants in previous research, participants in the present study attained similar mean scores on the instrument.

Analysis was performed using regression and frequencies procedures for evaluation of assumptions. Results of the evaluation of assumptions led to data transformations for the motivation variables to reduce skewness in their distributions and improve normality, linearity, and homoscedasticity of residuals. The data attained from the selected motivational variables were significantly negatively skewed, and were subsequently transformed.

Table 1

Means and Standard Deviations of Predictor Variables

Variable	MEAN	SD
MSLQ Motivation		
IGO	4.77	1.08
TV	5.46	1.12
SELP	5.63	1.09
MSLQ Strategies		
MSR	4.63	1.05
TSER	4.78	1.16
PRO	82.70	14.55
HASS	63.95	19.86
Final (DV)	70.9	9.58

IGO = Intrinsic Goal Orientation
TV = Task Value
SELP = Self Efficacy for Learning and Performance
MSR = Metacognitive Self-Regulation
TSER = Time-Study Environment Regulation
PRO = Procrastination
HASS = Perceptions of Daily Hassles

Tabachnick and Fidell (2001) describe appropriate data transformations. Based upon the severity of and direction of skewness of these variables, a square root transformation was used on the measure of intrinsic goal orientation (IGOTR), with logarithmic transformations used on the measures of task value (TVTR) and self-efficacy for learning and performance (SELPTR). No other variables required transformation. The application of Mahalanobis distance, applying a criterion of $p<.001$, indicated no multivariate outliers among cases.

Correlations among predictor variables after transformation procedures were employed are shown in Table 2. The motivation and learning strategies subscales of the MSLQ selected for the present study were highly intercorrelated. These results are similar to those obtained by the developers of the Motivated Strategies for Learning Questionnaire (Pintrich, et al., 1991). As expected, the measures assessing procrastination (PRO) and perceptions of daily hassles (HASS) show a negative relation with the selected motivation and strategy information subscales. In addition, Procrastination (PRO) and Perceptions of Daily Hassles (HASS) are significantly positively correlated. However, Perceptions of Daily Hassles (HASS) is positively related to grade on the final examination.

Hierarchical regression was employed to determine if addition of information regarding a student's perception of daily hassles (HASS) and tendencies toward procrastination (PRO) improved prediction of grade on the final examination beyond that afforded by gender, selected motivation variables (i.e., intrinsic goal orientation, task value, self-efficacy for learning and performance), and selected learning strategy variables (i.e., metacognitive self-regulation, time-study environment management).

Table 3 displays the standardized regression coefficients (β), adjusted R^2, and R^2 after entry of all predictor variables. R was not significantly different from zero at the end of Step 1 but was significantly different from zero at the end of subsequent steps. After step 4, with inclusion of alf predictor variables in the equation, $R = .39$, $F(8, 89) = 2.05$, $p = .05$.

Table 2

Intercorrelations Among Predictor Variables and Final Examination Score After Transformation of Motivation Variables

Variables	Final (DV)	Gender	IGOTR	TVTR	SELPTR	MSR	TSER	HASS
Gender	-.05							
IGOTR	.02	.07						
TVTR	.19*	-.29**	.67***					
SELPTR	.24**	.06	.31**	.35**				
MSR	.09	-.17	.56***	.65***	.45***			
TSER	.06	-.22*	.34***	.36**	.23*	.66***		
HASS	.17*	-.25**	-.16	-.04	-.26**	-.22*	-.30**	
PRO	-.06	.10	-.41***	-.38***	-.31***	-.51***	-.47***	.37***

*p<.05. **p<.01. ***p<.001

IGOTR = Intrinsic Goal Orientation (Transformed)

TVTR = Task Value (Transformed)

SELPTR = Self Efficacy for Learning and Performance (Transformed)

MSR = Metacognitive Self-Regulation

TSER = Time-Study Environment Regulation

HASS = Perceptions of Daily Hassles

PRO = Procrastination

Table 3

Summary of Hierarchical Regression Analysis for Variables Predicting Grade on Final Examination (After Transformation Of Motivation Variables)

	Grade on Final Examination			
Predictor	β Step 1	β Step 2	β Step 3	β Step 4
Gender	-.10	-.06	-.08	-.02
IGOTR		-.22	-.20	-.20
TVTR		.25	.25	.22
SELPTR		.24*	.24*	.25*
MSR			.06	.03
TSER			-.18	-.15
HASS				.20
PRO				-.15
Adjusted R^2	.01	.06	.07	.08
ΔR^2		.09*	.02	.03

*$p < .05$

IGO = Intrinsic Goal Orientation

TV = Task Value

SELP = Self Efficacy for Learning and Performance

MSR = Metacognitive Self-Regulation

TSER = Time - Study Environment Regulation

PRO = Procrastination

HASS = Perceptions of Daily Hassles

After Step 1, with gender entered in the equation, $R^2 = .01$, $F_{inc}(1, 96) = 1.01$, $p > .05$. Therefore, gender was not a significant predictor of grade on the final examination in the present study. After step 2, with the square root of intrinsic goal orientation (IGOTR), log of task value (TVTR) and log of self-efficacy of learning and performance (SELPTR) added to prediction of grade on the final examination by gender, $R^2 = .10$, $F_{inc}(4, 93) = 3.27$, $p = .02$. Addition of selected and transformed motivation variables resulted in a significant increment in R^2. After Step 3, with time-study environment regulation (TSER) and metacognitive self-regulation (MSR) added to prediction of grade on the final examination by gender and selected and transformed motivation variables, $R^2 = .12$, $F_{inc}(6, 91) = 1.03$, $p > .05$. Addition of selected learning strategy variables did not result in a significant increment in R^2. After Step 4, with perceptions of daily hassles (HASS) and procrastination (PRO) added to the prediction of grade on the final examination by gender, selected and transformed motivation variables, and selected learning strategy variables, $R^2 = .16$ (adjusted $R^2 = .08$), $F_{inc}(8, 89) = 1.62$, p $> .05$. Therefore, addition of perception of daily hassles and procrastination did not add to the prediction of grade on the final examination.

Discussion

The major purpose of the present study was to investigate the relationships among carefully selected cognitive, behavioral, and affective factors associated with student final examination grades in a college psychology course. Examination of the results of the present study parallel and support, to some extent, results found in previous studies. Self-efficacy (SELPTR) was related with final examination grade, as well as intrinsic goal orientation (IGOTR) and task value (TVTR) and was the one factor that added significantly to the prediction of final examination grade. This coincides with research asserting the importance of an individual's beliefs about their abilities to succeed at specific tasks and their subsequent performance (Bandura,1977,1986, 1997; Garcia & Pintrich, 1995; Pintrich et al., 1991).

Procrastination was found to be negatively related with the motivation and strategy variables and positively related with perceptions of daily hassles, but did not add to the prediction of grade on the final examination. Correlational results would suggest, however, that individuals who have greater tendencies toward procrastinatory behavior (PRO), may recognize the importance of learning (IGO) and value their participation in the learning endeavor (TVTR), but have difficulty in the control of both their personal study environment (TSER) and their thought processes (MSR), and perceive the impact of daily life events (HASS) to be more "demanding." Therefore, they may be likely to "wait to the last minute" to complete academically important tasks such as completing requirements for a course which heightens anxiety (Ferrari, 1991a, 1991b). Perhaps the exhibition and reinforcement of procrastination in high school resulted in little retribution from teachers or negative consequences, and completing assignments at the last minute did not result in any action that might produce, or become associated with, feelings of anxiety and lower evaluation of academic work. Therefore, procrastination was perpetuated.

Previous research has shown hassles to be a major source of stress for individuals, predicting difficulties with social adjustment, and psychological dysfunction (Brooks & Dubois, 1995; Chamberlain & Sitka, 1990; Kanner et al., 1981). They also have been shown to be positively associated with anxiety and depression, and inversely with perceived social competence and self-esteem (Kanner et al., 1987). However, the present study did show perceptions of daily hassles to be positively related to final examination grade, which is somewhat surprising. Hassles were negatively related to, gender, MSLQ subscales assessing self-efficacy (SELPTR), time-study environment regulation (TSER), and metacognitive self-regulation (MSR). Examination of Table 2 indicates that procrastination (PRO) and perceptions of daily hassles (HASS) may impact the ability of individuals to view themselves as being capable of achieving success in a specific task or academic endeavor (SELPTR), and may also negatively influence their perception and use of effective cognitive and metacognitive strategies to achieve these tasks and goals (MSR). This indicates the impact that anxiety associated with maladaptive behaviors has

toward academic motivation and use of effective learning strategies, and underscores the consideration of affective variables in the assessment of learning and performance.

It is of interest that, in the present study, variables previously found to be associated with academic performance (e.g., intrinsic goal orientation), or to be of concern to college students (e.g., procrastination), were not significant predictors of final examination grade. This supports the further investigation of affective and non-cognitive factors and their impact on academic performance. However, results of the present study may have been affected by some limitations of design, limited sample size, and multicollinearity. These limitations are discussed in the next section.

Course format did not play a role in the results of the present study. Since surveys and questionnaires were given before students had direct experience with the mechanics, protocol, and engagement with the course materials, they would have minimal information to formulate perceptions about the course. Therefore, their responses to questionnaire items would not have been affected.

Limitations

The present study has several limitations that may affect the generalizability of results. First, the variables and the associated surveys may not have been appropriate. Contrary to previous research, motivational orientation, specific learning strategies, and tendencies toward procrastination may not be the major concerns of students residing in the geo-political region that constitutes the service area of the institution. It is possible that factors not selected for analyses, such as critical thinking and test anxiety, might have been more predictive of performance for participants in the present study. Perhaps other affective factors, such as dispositional optimism (Scheier & Carver, 1985; Carver & Scheier, 2001), or attitudes about family commitments (Tinto, 1975, 1986a, 1986b), are more salient for participants than those factors assessed in the present study.

Secondly, students at this time in their college experience (i.e., within the first three semesters of their post secondary careers) may not understand that they should be concerned about affective factors associated with the college experience. This would include the problems associated with procrastination. In addition, they would generally experience relatively few 'daily' hassles assessed within the first two weeks of a semester. Also, hassles related to socializing may serve as a positive energizer of behavior,

initiating an "adrenaline rush", so to speak, which initially seems positive. Further research should explore the developmental aspects of these factors, to chart and define changes with regard to the college experience. This would require a longitudinal design and would most likely encounter problems of participation and attrition. In addition, it is possible that students who attend different types of institutions (state-supported regional universities, land grant institutions, private colleges) would exhibit differences in attitudes toward the value of post-secondary education, level of preparation, or perceptions of the college experience.

A third concern relates to the time during the semester that the surveys were administered. The Brief College Student Hassles Scale (Blankstein et al., 1991) was constructed to target specific events and concerns that were relevant to college students. The Procrastination Scale (Tuckman, 1991) is less specific to a particular population, but was developed using college students. It would seem, however, that most students, regardless of class standing, would be confronted with these events and experience similar concerns. In other words, whether students are first-semester freshmen or a fifth year seniors, they most likely have concerns regarding relationships, finances, academic and course deadlines, health, and so forth. Perceptions of daily hassles through the course of a given semester or over the time course of their college career would be of interest. However, such investigation was beyond the scope of the present study.

The Motivated Strategies for Learning Questionnaire is course-specific with respect to the presentation of the majority of the survey items. Students are directed to frame their responses with regard to the specific course in which the instrument is given. Pintrich and his colleagues indicate that, during the process of developing and assessing the validity and reliability of the instrument, they administered the MSLQ toward the end of any given semester (Pintrich et al., 1991). Students would, therefore, have greater knowledge with regard to specific course format and construction of examinations, as well as their individual feelings about aspects of the course and instructor. This is congruent with the intended purpose of the questionnaire, which was to assess college students' motivational orientation and their use of different learning strategies. Given the intended purpose of the present study, all of the surveys selected were given to students within the first two weeks of the semester. Therefore, students would have limited

knowledge about specific aspects of the course. Also, the majority of students assessed in the present study were underclassmen (i.e., freshman or sophomores) (80.5 %), and would have had little or no previous college experience. Therefore, it seems likely that they would be less accurate in their perceptions of self-efficacy and less objective in their valuing of specific course content. They also would be less likely to adequately ascertain and implement necessary strategies for success in the specific course.

Therefore, administering the selected subscales of the MSLQ to participants during the first two weeks of the academic term may be called into question. The use of these subscales as predictors of student performance and engagement would seem to be limited when presented in this way. However, a major purpose of the present study was to assess the validity and reliability of such. Essentially, the present study was intended to demonstrate the utility of the selected surveys to predict what students will do in a specific course. Administering the MSLQ toward the end of any given semester would limit its utility in the prediction of future performance and engagement. Essentially, the information is gathered and evaluated too late to be of use. There would seem to be little time to affect student performance in a particular course if the majority of assessments, including content examinations and assessment of student engagement, were postponed until the end of a given semester.

Implications / Suggestions

Despite its limitations, one can draw several implications from this study. The results, although statistically disappointing, demonstrate the usefulness of a multidimensional approach to the study of factors affecting academic performance. This is suggestive of the sociological perspective discussed previously and illustrated by Tinto (1993) and Cookson (1986). Including cognitive, affective, and behavioral factors, as well as academic indicators in the assessment of academic potential would address the complex nature of the experience and fundamentally enhance understanding of the relations among these factors. This approach would be beneficial toward attaining the goal of facilitating student academic success.

Results of the present study show that readily available instruments assessing motivational orientation and perceptions of day-to-day experiences, when given and

evaluated early in the academic term, provide some significant information regarding the likely behavior of a student in a specific course. It would seem that early identification of potential problems, and the resultant application of appropriate interventions, would increase the likelihood of student short-term success in a given course, as well as enhancing their likelihood of success in future endeavors (e.g., retention, course work, career). Similarly, it might be appropriate to include these non-academic factors, such as procrastination and perceptions of daily hassles, along with traditional predictors of academic performance (high school grade point average, ACT), in an effort to enhance predictability of academic performance. This suggests that research on academic performance and engagement should not only consider factors traditionally associated with success, including motivational orientation and learning strategies, but also affective variables, such as a student's perceptions of daily events and tendencies toward procrastination. In addition, factors not presently considered may be more salient to a student's experience and therefore be more predictive of performance and engagement. These might include, but certainly are not limited to, optimism (Carver & Scheier, 2001), tendencies toward perfectionism (Frost, Marten, Lahart, & Rosenblate, 1990), and perceptions of inclusion in the college community, as suggested by Tinto (1993).

The present findings also have important implications for faculty and administrative personnel attempting to understand the student experience. For instance, the results of the present study suggest that faculty should employ a multifaceted model when attempting to assess whether a student will be successful in a course. Preconceptions about an individual's likelihood of success should not be made on the basis of grade point average and ACT scores alone. Early assessment and evaluation of student self-beliefs about their likelihood of success in post-secondary education, or in a course, as well as their perceptions of the utility of the course as it applies to them, would be beneficial. The instructor would have insight about individual students that would suggest appropriate interventions to maximize a student's opportunity for success. These interventions might take the form of tutorial practices, counseling, suggestions of alternative study and test-taking skills, or development of effective coping strategies. In this way faculty would be addressing skills as well as negative cognitions about self that often serve to maintain maladaptive behaviors. In addition, college administration might

ascertain more effectively the potential success of new students by combining such information with what is presently assessed and found to be somewhat predictive of college aptitude.

To further investigate the relationships among the predictor variables, it would seem appropriate to replicate the present study using a larger sample. The use of a variety of samples should be considered, as would the use of a more appropriate statistical technique for analysis. This would include, but not be limited to, students at other academic institutions or across class standing or years of college experience. Such investigation would contribute to a greater understanding of the problem.

Future research also should be directed toward exploring other student cognitions and behaviors that may contribute to understanding the complexity of the college student experience. In the present study, motivation, learning strategies, procrastination, and perceptions of daily hassles were selected, given theoretical and empirical investigations that indicated that they were of particular importance. The results were somewhat disappointing, but nonetheless informative. Perhaps the instruments themselves were not appropriate in the present situation. Future research should be directed toward implementing, testing, and perhaps creating alternative instruments other than those chosen for the present study. In addition, future research should be directed toward determining if other cognitions, behaviors, and beliefs are more salient to the student experience. Other affective influences, such as dispositional optimism, may be more indicative of performance. Given the complexity of the college student experience, the possible combinations and permutations seem endless. However, if the effectiveness of assessing student potential can be enhanced, in keeping with the goal of increasing student academic success, the effort will be worth the expense.

References

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1991). Self-regulation of motivation through anticipatory and self-reflective mechanisms. In R.A. Dienstbier (Ed.), *Nebraska Symposium on Motivation, 1990* (Vol. 38, 69-164). Lincoln, NE: University of Nebraska Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Beswick, G., Rothblum, E. D., & Mann, L. (1988). Psychological antecedents of student procrastination. *Australian Psychologist, 23*, 207-217.

Blankstein, K., & Flett, G. (1992). Specificity in the assessment of daily hassles: Hassles, locus of control, and adjustment in college students. *Canadian Journal of Behavioural Science, 24*, 382-398.

Blankstein, K., Flett, G., & Koledin, S. (1991). The Brief College Student Hassles Scale: Development, validation and relation with pessimism. *Journal of College Student Development, 32*, 258-264.

Bloom, B. S. (1981). *All our children learning. A primer for parents, teachers, and other educators.* New York: McGraw-Hill.

Brooks, J. H., & DuBois, D.L. (1995). Individual and environmental predictors of adjustment during the first year of college. *Journal of College Student Development, 36*, 347-360.

Buskist, W., Cush, D., & DeGrandpre, R. J. (1991). The life and times of PSI. *Journal of Behavioral Education, 1*, 215-234.

Carver, C. S., & Scheier, M. F. (2001). Optimism, pessimism, and psychological well-being. In E. C. Chang (Ed.), *Optimism and pessimism: Implications for theory, research and practice* (pp. 189-216). Washington, DC: American Psychological Association.

Chamberlain, K, & Zitka, S. (1990). The minor events approach to stress: Support for the use of daily hassles. *British Journal of Psychology, 81*, 469-481.

Compas, B. E., Davis, G. E., Forsythe, C. J., & Wagner, B. M. (1987). Assessment of major and daily stressful events during adolescence. The Adolescent Perceived Events Scale. *Journal of Counseling and Clinical Psychology, 55*, 534-541.

Coon, D. (1997). *Introduction to psychology: Exploration and application* (8th ed.). St. Paul, MN: West.

Cook, D. A. (1990). PSI: Two unorthodox studies. *The Behavior Analyst, 13,* 67-77.

Cookson, P. (1986). A framework for theory and research on adult education participation. *Adult Education Quarterly, 36*(3), 130-141.

Corno, L., & Mandinach, E. (1983). The role of cognitive engagement in classroom learning and motivation. *Educational Psychologist, 18*, 88-100.

Dunkin, M. J., & Barnes, J. (1986). Research on teaching in higher education, In Merlin C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.), pp. 754-777. New York: McMillan.

Eccles, J. (1983). Expectancies, values, and academic behaviors, In J.T. Spence (Ed.), *Achievement and achievement motives* (pp. 75-146). San Francisco: Freeman.

Effert, B., & Ferrari, J. R. (1989). Decisional procrastination: Examining personality correlates. *Journal of Social Behavior and Personality, 4*, 151-156.

Elliott, T., Gramling, S., Lee, L., Elliott, A., & Shrout, J. (1989). Hassles on campus. *The College Student Affairs Journal, 9*(3), 13-22.

Ellis, A., & Klaus, W. (1977). *Overcoming procrastination*. New York: Signet.

Entwistle, N. (1995). Introduction: Influences of instructional settings on learning and cognitive development – findings from European research programs. *Educational Psychologist, 30*(1),1-3.

Ewedemi, F., & Linn, M. W. (1987). Health and hassles in older and younger men. *Journal of Clinical Psychology, 43*, 347-353.

Ferrari, J. R. (1989). Reliability of academic and dispositional measures of procrastination. *Psychological Reports, 64*, 1057-1058.

Ferrari, J. R. (1991a). Self-handicapping by procrastinators: Protecting self-esteem, social-esteem, or both? *Journal of Research on Personality, 25*, 245-261.

Ferrari, J. R. (1991b). A preference for a favorable public impression by procrastinators: Selecting among cognitive and social tasks. *Personality and Individual Differences, 12*, 1233-1237.

Ferrari, J. R., Parker, J. T., & Ware, C. B. (1992). Academic procrastination: Personality correlates with Myers-Briggs types, self-efficacy, and academic locus of control. *Journal of Social Behavior and Personality, 7*, 495-502.

Fisher, S., & Hood, B. (1987). The stress of the transition to university: A longitudinal study of psychological disturbance, absent-mindedness, and vulnerability to homesickness. *British Journal of Psychology, 78*, 425-441.

Fletcher, J. D. (1992). Individualized systems of instruction. In Marvin C. Alkin (Ed.), *Encyclopedia of educational research* (Vol. 2., pp. 613-620) (6th ed.). New York: McMillan.

Flett, G. L., Pliner, P., & Blankstein, L. R. (1989). Depression and components of attributional complexity. *Journal of Personality and Social Psychology, 56*, 757-764.

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*(5), 449-468.

Garcia, T., & Pintrich, P. R. (1995). Assessing student's motivation and learning strategies: The Motivated Strategies for Learning Questionnaire. Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 18-27, 1995) ERIC Document Reproduction Service No. ED383770.

Grow, G. O. (1991). Teaching learners to be self-directed. *Adult Education Quarterly, 41*(3), 125-149.

Hiemstra, R. (1994). Self-directed adult learning. In T. Husen and T. N. Postlewaite (Editors-in-Chief), *The International Encyclopedia of Education* (Vol. 9), p. 5394-5399.

Holahan, C. K., & Holahan, C. J. (1987). Life stress, hassles, and self-efficacy in aging: A replication and extension. *Journal of Applied Social Psychology,* 17, 574-592.

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment scale. *Journal of Psychosomatic Research, 11*, 213-218.

Janis, I. L., & Mann, L. (1977). *Decision making: A psychological analysis of conflicts, choice, and commitment*. New York: Free Press.

Kanner, A. D., Coyne, J. C., Schaefer, C., & Lazarus, R. S. (1981). Comparison of two modes of stress measurement: Daily hassles and uplifts versus major life events. *Journal of Behavioral Medicine, 4*, 1-39.

Kanner, A. D., Feldman, S., Weinberger, D. A., & Ford, M. E. (1987). Uplifts, hassles, and adaptational outcomes in early adolescents. *Journal of Early Adolescence, 7*, 371-394.

Keller, F. (1968). "Goodbye, teacher...." *Journal of Applied Behavior Analysis, 1*, 79-89.

Keller, F. (1972). A programmed system of instruction. In J.L. Sayre and J.J. Knightly, *The Personalized System of Instruction in higher education: Readings on PSI - The Keller Plan*. Enid, OK: Seminary Press.

Keller, F. (1981). PSI and educational reform. *Journal of College Science Teaching, 12*, 5-8.

Kulik, J. A., Kulik, C. C., & Cohen, P. A. (1979). A meta-analysis of outcome studies of Keller's Personalized System of Instruction. *American Psychologist, 34*, 307-318.

Lay, C. H. (1986). At last, my research article on procrastination. *Journal of Research in Personality, 20*, 474-495.

Lay, C. H. (1987). A modal profile analysis of procrastinators: A search for types. *Personality and Individual Differences, 8*, 705-714.

Lay, C. H. (1988). The relation of procrastination and optimism to judgments of time to complete an essay and anticipation of setbacks. *Journal of Social Behavior and Personality, 3*(3), 201-214.

McCown, W., Johnson, J., & Petzel, T. (1989). Procrastination: A principle components analysis. *Personality and Individual Differences, 10*, 197-202.

McKeachie, W., Pintrich, P. R., & Lin, Y. (1985). Teaching learning strategies. *Educational Psychologist, 20*(3), 153-160.

Naveh-Benjamin, M., McKeachie, W. J., & Lin Y. G. (1987). Two types of test-anxious students: Support for an information-processing model. *Journal of Educational Psychology, 79*, 131-136.

Noble, J. & Sawyer, R. (1989). Predicting grades in college freshman English and mathematics courses. *Journal of College Student Development, 30*(4), 345-353.

Patrick, H., Ryan, A. M., & Pintrich, P. R. (1999). The differential impact of extrinsic and mastery goal orientations on males' and females' self-regulated learning. *Learning and Individual Differences, 11*, 153-171.

Pintrich, P. R. (1988a). A process-oriented view of student motivation and cognition. In J. Stark and L. Mets (Eds.) *Improving teaching and learning through research: New directions for institutional research* (Vol. 57, pp. 65-79). San Francisco: Jossey-Bass.

Pintrich, P. R. (1988b). Student learning and college teaching. In R.E. Young and K.E. Eble (Eds.), *College teaching and learning: Preparing for new commitments. New directions for teaching and learning* (Vol. 33, pp.71-86). San Francisco: Jossey-Bass.

Pintrich, P. R. (1989). The dynamic interplay of student motivation and cognition in the college classroom. In C. Ames and M. Maehr (Eds.), Advances in motivation and achievement: Motivation-enhancing environments (Vol. 6, pp. 117-160). Greenwich, CT: JAI Press.

Pintrich, P. R., & DeGroot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*, 33-40.

Pintrich, P. R., & Schunk, D. (1996). *Motivation in education: Theory, research, and applications*. Englewood Cliffs, NJ: Prentice-Hall.

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)*. (available from the author), National Center for Research to Improve Postsecondary Teaching and Learning (NCRIPTAL) and the University of Michigan.

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). *Educational and Psychological Measurement, 53*, 801-813.

Pratt, D. D. (1988). Andragogy as a relational construct. *Adult Education Quarterly, 38*, 160-181.

Ridley, D. S., Schutz, P., Glanz, R., & Weinstein, C. (1990). Self-regulated learning: The interactive influence of metacognitive awareness and goal-setting. *Journal of Experimental Education, 60*, 293-306.

Rothblum, E. D., Solomon, L. J., & Murakami, J. (1986). Affective, cognitive, and behavioral differences in high and low procrastinators. *Journal of Counseling Psychology, 33*, 387-394.

Schunk, D. (1991). Self-efficacy and academic motivation. *Educational Psychologist, 26*, 207-231.

Schutz, P. A., & Lanehart, S. L. (1994). Long-term educational goals, subgoals, learning strategies use and the academic performance of college students. *Learning and Individual Differences, 6*, 399-412.

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implication of generalized expectancies. *Health Psychology, 4*(3), 219-247.

Seppanen, L. (1995). *Implications for retention strategies of differential student progress rates and the literature on student retention (Report No. 95-4)*. (ERIC Document Reproduction Service No. ED387165)

Skinner, B. F. (1954). The science of learning and the art of teaching. *Harvard Educational Review, 24*, 86-97.

Snow, R. E. (1993, April). Discussants comments. In N.J. Entwistle (Chair), *Principles of learning, individual differences, and instructional strategies*. Symposium conducted at the annual meeting of the American Educational Research Association, Atlanta, GA.

Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology, 31*, 503-509.

Spear, G. E., & Mocker, D. W. (1984). The organizing circumstance: Environmental determinants in self-directed learning. *Adult Education Quarterly, 35*(1), 1-10.

Stoynoff, S. (1997). Factors associated with international students' academic achievement. *Journal of Instructional Psychology, 24*(1), 56-68.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics*. (4th ed.). Needham Heights, MA: Allyn & Bacon.

Terenzini, P. T., Pascarella, E., & Lorang, W. (1982). An assessment of the academic and social influences on freshman year educational outcomes. *Review of Higher Education, 5*, 86-110.

Terenzini, P. T., Rendon, L. I., Upcraft, M. L., Millar, S. B., Allison, K. W., Gregg, P.L., et al. (1993). The transition to college: Diverse students, diverse stories. *Research in Higher Education, 35*, 57-73.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*, 89-95.

Tinto, V. (1986a). Theories of student departure revisited. In John C. Smart (ed.), *Higher Education: Handbook of Theory and Research,* Vol. 2, pp. 359-384. New York: Agathon Press.

Tinto, V. (1986b) Stages of student departure: Reflections on the longitudinal character of student leaving. *Journal of Higher Education, 59*, 438-455.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Tuckman, B. W. (1991). The development and concurrent validity of the procrastination scale. *Educational and Psychological Measurement, 51*, 473-480.

Tuckman, B. W., & Sexton, T.L. (1990). The relation between self-beliefs and self-regulated performance. *Journal of Social Behavior and Personality, 5*, 465-472.

Wade, B.D., & Walker, C. (1994). Assessing the effect of various academic parameters on the academic performance of honors students a Southern University-Baton Rouge. *Education, 115*(1), 63-69.

Weinstein, C., & Mayer, R. (1985). The teaching of learning strategies. In M. Wittrock (ed.), *Handbook of research on teaching* (pp. 315-327). New York: Macmillan.

Wolters, C. A., & Yu, S. L. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and Individual Differences, 8*, 211-238.

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